Listing of Claims

1. (Currently Amended) An image processing apparatus comprising:

a first segmentation means (30) for segmenting one or more images (10) into an output segmentation map (40) including a plurality of pixel groups separated by edges including at least some false edges;

a filtering means (50) for filtering the segmentation map (40) to remove the false edges, the filtering means (50) outputting the filtered segmentation (60) next to a second segmentation means (70) for re-segmentation.

2. (Currently Amended) The image processing apparatus as set forth in claim 1, wherein the first and second segmentation means (30, 70) use a constant color model, the constant color model including an identification means for identifying image regions with homogeneous color or grey scale.

3. (Original) The image processing apparatus as set forth in claim 1, wherein the pixel groups are initially rectangular shaped regions.

4. (Currently Amended) The image processing apparatus as set forth in claim 1, wherein the filtering means includes:

a computing means (110) for computing a histogram (200) of the pixel labels inside a window surrounding a given pixel in the segmentation map; and

a first determining means (120) for determining a frequency of occurrence for each pixel label in the window.

5. (Currently Amended) The image processing apparatus as set forth in claim 4, wherein the filtering means further includes:

a second determining means (130) for determining a most frequently occurring pixel label in the histogram;

an assigning means (150) for assigning to the given pixel in the output segmentation map (40) the pixel label which occurs most frequently.

6. (Currently Amended)   The image processing apparatus as set forth in claim 5, further including a tie breaking means (160) for selecting one of:

a larger of equally, most frequently occurring labels, and

a smaller of equal, most frequently occurring labels, to be assigned to the given pixel when two or more labels occur equally and most frequently.

7. (Currently Amended)   The imaging processing apparatus as set forth in claim 5, further including a tie breaking means (160) for selecting the pixel label to be assigned to the given pixel where two or more pixel labels have the same frequency and the frequency is higher than the frequency of all other pixel labels inside the histogram.

8. (Currently Amended)   The image processing apparatus as set forth in claim 4, wherein the window (110) is a square of 5x5 pixels.

9. (Currently Amended)   The image processing apparatus as set forth in claim 1, wherein the one or more images (10) include frames of a two-dimensional video.

10. (Original)   A method for processing one or more images, the method including:

segmenting an image into a segmentation map including a plurality of pixel groups separated by edges including at least some false edges;

filtering the segmentation map to remove the false edges; and

repeating the segmenting step to generate an output image.

11. (Original)   The method for processing one or more images as set forth in claim 10, further including repeating the region segmenting step and the filtering step a plurality of times to further refine the edges.

12. (Original)   The method for processing one or more images as set forth in claim 10, wherein the segmenting of the image is region-based.

13. (Original)   The method for processing one or more images as set forth in claim 12, wherein the region-based segmenting step uses a constant color model, the constant color model including the identification of image regions with homogeneous color.

14. (Original)   The method for processing one or more images as set forth in claim 10, wherein the pixel groups are square regions of 5x5 pixels.

15. (Original)   The method for processing one or more images as set forth in claim 10, wherein the filtering step includes:

computing a histogram of the pixel labels inside a window for a given output pixel in the segmentation map; and

determining the frequency of occurrence for each pixel label in the window.

16. (Original)   The method for processing one or more images as set forth in claim 15, wherein the filtering further includes:

determining a most frequently occurring label of the histogram;

assigning to the output pixel the pixel label with the maximum occurrence.

17. (Original)   The method for processing one or more images as set forth in claim 16, further including when more than one label occurs with equal most frequency assigning the given pixel one of:

the smallest of the equally frequent labels, and

the largest of the equally frequent labels.

18. (Original)   The method for processing one or more images as set forth in claim 10, wherein the one or more images include frames of a two-dimensional video.